

Remarks

A. Summary of Claims

No claims have been amended, cancelled, or added. Therefore, claims 64-120 are pending.

B. Restriction Requirement

Applicant respectfully requests that the restriction requirement be withdrawn for at least the reasons discussed in the following sections.

C. Anticipation Rejection

1. Summary of rejection

Claims 64-67, 76-95, and 99-100 are rejected under 35 U.S.C. § 102(b) for allegedly being anticipated by U.S. Patent 6,049,428 (“‘428”). It appears that the Examiner’s position is based, at least in part, on a theory of inherency (*e.g.*, “squeegees are inherently flexible”).

Applicant respectfully disagrees with the Examiner. In order to maintain this rejection, it must be shown that ‘428 discloses and arranges every element in an identical manner claimed by Applicant. *See In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990) (“For a prior art reference to anticipate in terms of 35 U.S.C. § 102, every element of the claimed invention must be identically shown in a single reference. These elements must be arranged as in the claim under review”).

2. Applicant’s Claim 64

Applicant’s claim 64 concerns “[a] method for forming a polarizing coating on a curved surface of a substrate comprising” in part:

- a) providing a substrate having a curved surface;
- b) providing a flexible apparatus;

...

- d) applying the flexible apparatus on the curved surface of the substrate so that the flexible apparatus matches the curvature of the substrate curved surface;
- e) moving the flexible apparatus past the deposited polarizing liquid and the substrate, whereby a film of the polarizing liquid is formed by shear flow on the substrate curved surface....

3. '428 does not appear to be enabled for coating a curved surface

The '428 reference does not appear to provide an enabling disclosure for coating a curved surface, which is necessary to support the anticipation rejection. *See Elan Pharms., Inc. v. Mayo Found. For Med. Educ. & Research*, 346 F.3d 1051, 1054 (Fed. Cir. 2003) ("To serve as an anticipating reference, the reference must enable that which it is asserted to anticipate.").

In particular, 428 discloses that a technique of liquid crystal orientation can be combined with application of a liquid crystal onto a substrate surface by using a "roll-on-roll" technology:

The use of dyes I-XXXIV in the liquid crystal material facilitates using a method of liquid crystal orientation based on the mechanical ordering. In this case, the ordering can be achieved through the development of shear stresses or by forces producing tensile deformation of the meniscus formed upon the disjoining tear-off of two surfaces with a liquid crystal layer between them. These techniques of liquid crystal orientation can be combined with application of the liquid crystal onto the substrate surface, e.g., by using a "roll-on-roll" technology. It is possible to use, as with prior art materials that did not provide high polarizing characteristics, various devices for the application of the coating, including flat slots, non-rotary (blade) and rotary (rolling cylinder) squeegees, and similar devices.

428 at col. 21, lines 4-16. The Examiner considers that the methods in '428 are suitable for applying polarizing coatings on flat, spherical or cylindrical solid surfaces by citing to column 21, lines 21-25.

Applicant respectfully submits, however, that the Examiner's referenced citations fail to disclose a method for forming a polarizing coating on a curved surface of a substrate; rather, they only disclose a liquid crystal material which facilitates the preparation of a dichroic polarizer.

Stated another way, even if '428 discloses that its liquid crystal material is suitable for spherical

or cylindrical solid surfaces, it does not disclose a method for forming a polarizing coating on a curved surface, which is required by Applicant's claimed invention.

Indeed, the method for obtaining polarizing coatings described in '428 is limited to solid plates or films (*see*, col. 22, lines 42-44), which are necessarily flat substrates. This is confirmed by the examples and by Figure 4 of '428, both of which illustrate coating methods on flat substrates, in particular polyethylene terephthalate films and glass plates (Example 1 at cols. 26)-27. What is particularly interesting is that '428 does not appear to disclose any means to adapt its coating method to curved substrates. That is, there is no disclosure in this reference suggesting how one would go about coating a curved substrate. Therefore, one wonders whether '428 provides an enabling disclosure.

4. *The squeegees disclosed 428 are not necessarily flexible*

The Examiner takes the position that the squeegees disclosed in 428 are "inherently flexible" (Office Action at page 3).

Applicant respectfully disagrees with this conclusion. Case law and the MPEP both clearly state that "[t]o establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is **necessarily present** in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" MPEP §2112(IV) (emphasis added) (internal citations omitted).

Contrary to the Examiner's position, it appears that the squeegees used in 428 are made of metal and are not necessarily flexible. For instance, the portion relied upon by the Examiner (col. 2, lines 9-16 of 428) disclose non-rotary (blade) and rotary (rolling cylinder) squeegees.

Cylinders are in general made of metal. There is no indication in 428 concerning the flexibility of metal cylinders. Therefore, one cannot presume from a metallic element that its

flexibility would be sufficient to match the curvature of a curved substrate as stated in Applicant's claim 64. The same can be said for the non-rotary squeegees.

In fact, Example 1 of '428 discloses the application of polarization coatings on two different flat substrates: poly(ethylene) terephthalate film and a glass plate. One of the squeegees used appears to be made from "steel cylinders" (col. 26, line 64). An objective analysis by a person having ordinary skill would likely result in a conclusion that the steel cylinders are not necessarily flexible such that it would flex to match the curvature of a substrate having a curved surface.

Therefore, evidence of record does not support a conclusion that the 428 squeegees are always/necessarily flexible in a manner recited in Applicant's claim 64. Thus, the inherency theory proffered by the Examiner does not meet the high threshold standard for establishing anticipation by inherency.

5. *Element e) of claim 64 is not disclosed in 428*

Element e) of Applicant's claim 64 recites: "moving the flexible apparatus past the deposited polarizing liquid and the substrate...."

By comparison, 428 discloses that its substrate to be coated (*i.e.*, PET film or glass plate) is moved past the rollers. In this regard, '428 states:

The liquid crystal is poured into the die. **The film is moved at a rate of 150 mm/second** to form an oriented dye layer on the film surface. [col. 26, lines 58-60] (emphasis added)

PET film is passed between two steel cylinders (diameter 20 mm, length 1000 mm) with thoroughly polished surfaces. The thickness of the polarizing coating is determined by 60 μ thick spaces situated at the cylinder ends. An aliquot of a liquid crystal phase (2 ml) is applied onto the film surface to form a 5-10 mm wide band immediately before the cylinder. **Then the film is moved between cylinders at a velocity of 150 mm/second.** [col. 26, line 64, to col. 27, line 6] (emphasis added)

An aliquot (about 1 ml of a liquid crystal is placed in the form of a band before the cylinder and **the film is moved at a velocity of 50 mm/s.** [col. 27, lines 12-14] (emphasis added)

A 0.5 ml volume of liquid crystal is introduced between cylinders on the surface of both films. **Then the films are drawn downward at a velocity of 50 mm/second and simultaneously moved apart.** [col. 27, lines 19-21 (emphasis added)

A non-rotary cylindrical squeegee (diameter 20 mm, length 200 mm) is pressed against the plate. The thickness of the dye layer is controlled by two spacers with a thickness of 10 μ and a width of 5 mm, fixed at a distance of 80 mm on the cylinder surface. **The table with the plate is moved at velocity of 100 mm/second with respect to the immobile cylinder.** [col. 27, lines 31-36] (emphasis added)

The table is moved at a velocity of 20 mm/second relative to the cylinder, so that the cylinder rolls on the plate surface. As a result, the liquid crystal dye is uniformly spread and oriented on the plate surface. [col. 27, lines 43-45] (emphasis added).

Therefore, 428 fails to disclose or suggest element e) of Applicant's claim 64, which recites "moving the flexible apparatus past the deposited polarizing liquid and the substrate...."

6. Conclusion concerning anticipation

Several elements of Applicant's claim 64 are not disclosed by the 428 reference. Therefore, the current anticipation rejection should be withdrawn for at least these reasons.

D. Obviousness Rejections

Dependent claims 68-75 and 96-98 are rejected under 35 U.S.C. § 103(a) for allegedly being obvious over the '428 reference. Dependent claims 101-103 are also said to be obvious over '428 in view of U.S. Publication 2004/0145701 ("701").

Applicant respectfully disagrees. All of the comments made above concerning the '428 reference equally apply to these obviousness rejections. That is, '428 has several deficiencies when compared with independent claim 64, thereby rendering claim 64 and all of its dependent claims patentable over '428. Further, the '701 reference fails to supplement '428's deficiencies, thereby rendering claims 101-103 patentable over the combination of these references.

Nonetheless, Applicant provides the following additional comments concerning the '701 reference, which further confirms the patentability of the present set of claims over the cited art.

The '701 reference discloses unfinished and semi-finished lenses that have optical coatings or a transmission altering layer. The transmission altering layer can include a polarizer that is sandwiched in between two elements that are laminated to constitute the lens. Elements 4, 4', 75, 75', 150, 150', 190, and 190' in the Figures represent this altering layer.

As illustrated in Figures 1A, 2B, 3B, 4A, 4B, and 5, the transmission altering layers are planar/flat/uncurved surfaces. With respect to Figure 1B, the curved form is introduced by thermoforming the flat unfinished lens of Figure 1A (paragraph [0028]). Therefore, the transmission altering layer in the '701 reference is never applied to a curved surface. This is similar to the '428 references disclosure; that is, a polarizing layer is never applied to a curved surface in either one of '701 or '428.

Further, and with respect to '701, this document fails to disclose a method for forming a polarizing coating on a curved surface of a substrate. This document does not disclose applying a flexible apparatus on the curved surface of the substrate so that the flexible apparatus matches the curvature of the substrate curved surface and moving the flexible apparatus past a deposited polarizing liquid and the substrate, whereby a film of the polarizing liquid is formed by shear flow on the substrate curved surface as described in Applicant's claim 64.

Therefore, the combination of '428 and '701 fails to disclose or suggest application of a polarizing coating onto a curved surface of a lens. Further, it is interesting to point out that neither of these references provides a description of how one would go about performing such a process, as both references only disclose means that can be used to coat flat/planar surfaces. The objective conclusion that is reached is that a person having ordinary skill would never have arrived at Applicant's claimed invention even by combining '428 with '701.

Applicant requests that the obviousness rejections be withdrawn for at least these reasons.

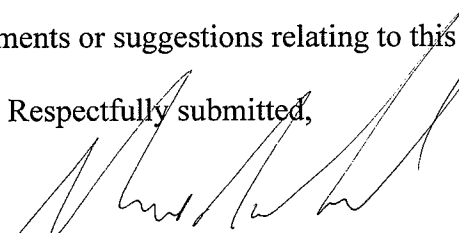
E. Additional Comment

Dependent claims 68-75 provide further limitations on the structure of the holder that is used to hold curved substrate in place. Applicant respectfully notes that neither '428 nor '701 provide any description of such a holder. Therefore, these claims are further patentable over the cited art.

F. Conclusion

Applicant believes that this is a complete response to the office action and that this case is in condition for allowance. The Examiner is invited to contact the undersigned Applicant's representative at (512) 536-3020 with any comments or suggestions relating to this case.

Respectfully submitted,



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